

```

1 import sys; print('Python %s on %s' % (sys.version, sys.platform))
2 /opt/anaconda3/envs/simons_do_mpc/bin/python -X pycache_prefix=/Users/
  simonhellmann/Library/Caches/JetBrains/PyCharm2024.1/cpython-cache /
  Applications/PyCharm.app/Contents/plugins/python/helpers/pydev/pydevd.
  py --multiprocess --qt-support=auto --client 127.0.0.1 --port 60944 --
  file /Users/simonhellmann/Documents/GIT/ad_meal_prep_control/
  ad_meal_prep_control/scenarios/scenario_2c.py
3 Connected to pydev debugger (build 241.17890.14)
4 pydev debugger: warning: trying to add breakpoint to file that does
  not exist: /Users/simonhellmann/Documents/GIT/ad_meal_prep_control/
  ad_meal_prep_control/plot_generation/test_distribution_plot.ipynb (
  will have no effect)
5 pygame 2.6.1 (SDL 2.28.4, Python 3.11.10)
6 Hello from the pygame community. https://www.pygame.org/contribute.
  html
7  0%|          | 0/1440 [00:00<?, ?it/s]
8 *****
9 This program contains Ipopt, a library for large-scale nonlinear
  optimization.
10 Ipopt is released as open source code under the Eclipse Public
  License (EPL).
11     For more information visit https://github.com/coin-or/Ipopt
12 *****
13
14 This is Ipopt version 3.14.11, running with linear solver ma27.
15
16 Number of nonzeros in equality constraint Jacobian...:    9900
17 Number of nonzeros in inequality constraint Jacobian.:    120
18 Number of nonzeros in Lagrangian Hessian.....:    3400
19
20 Total number of variables.....:    1880
21         variables with only lower bounds:    144
22         variables with lower and upper bounds:    120
23         variables with only upper bounds:    0
24 Total number of equality constraints.....:    1620
25 Total number of inequality constraints.....:    40
26         inequality constraints with only lower bounds:    0
27         inequality constraints with lower and upper bounds:    0
28         inequality constraints with only upper bounds:    40
29
30 iter      objective      inf_pr   inf_du lg(mu)  ||d||  lg(rg) alpha_du
   alpha_pr  ls
31    0  5.0099802e+01  7.09e+00  1.00e+02  -1.0  0.00e+00   -  0.00e+00  0.
   00e+00  0
32    1  7.5858008e+02  3.58e+00  1.09e+04  -1.0  2.66e+01  -4.0  3.59e-01  5.
   00e-01h  1
33    2  1.4176959e+02  2.18e+00  4.58e+03  -1.0  2.03e+01  -4.5  3.14e-01  3.
   91e-01f  1
34    3  9.9820735e+01  1.52e+00  3.95e+03  -1.0  1.15e+01  -5.0  1.00e+00  3.
   07e-01h  1
35    4  6.1091382e+01  2.64e-01  1.10e+04  -1.0  1.14e+01  -5.4  1.00e+00  1.

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35 00e+00h 1
36 5 6.1367730e+01 1.12e-02 7.65e+02 -1.0 1.20e+00 -5.9 1.00e+00 1.
00e+00h 1
37 6 6.1333885e+01 6.47e-04 6.04e+00 -1.0 1.65e-01 -6.4 1.00e+00 1.
00e+00h 1
38 7 6.1334108e+01 1.62e-08 2.49e-04 -1.0 1.50e-03 -6.9 1.00e+00 1.
00e+00h 1
39 8 2.8588129e+01 7.48e-02 1.67e+03 -2.5 3.32e+00 -7.3 8.77e-01 8.
55e-01f 1
40 9 1.5468408e+01 1.48e+00 9.57e+02 -2.5 2.41e+01 -7.8 8.16e-01 7.
41e-01f 1
41 iter objective inf_pr inf_du lg(mu) ||d|| lg(rg) alpha_du
alpha_pr ls
42 10 6.7778702e+00 1.05e+00 6.05e+02 -2.5 7.45e+00 -8.3 6.75e-01 1.
00e+00h 1
43 11 6.6309411e+00 6.35e-02 3.92e+01 -2.5 1.48e+00 -8.8 1.00e+00 1.
00e+00h 1
44 12 6.7102303e+00 9.61e-04 1.27e+00 -2.5 1.56e-01 -9.2 1.00e+00 1.
00e+00h 1
45 13 6.7149072e+00 3.88e-06 4.15e-03 -2.5 1.23e-02 -9.7 1.00e+00 1.
00e+00h 1
46 14 1.7301114e+00 4.89e-01 1.30e+02 -3.8 6.44e+00 -10.2 3.45e-01 8.
43e-01f 1
47 15 6.9847704e-01 2.27e-01 7.73e+00 -3.8 2.46e+00 -10.7 8.56e-01 7.
21e-01h 1
48 16 3.3973381e-01 6.70e-03 4.28e+00 -3.8 4.83e-01 -11.2 1.00e+00 1.
00e+00h 1
49 17 3.4489673e-01 9.85e-07 1.79e-03 -3.8 1.35e-02 -11.6 1.00e+00 1.
00e+00h 1
50 18 3.4488050e-01 3.77e-09 6.15e-09 -3.8 6.95e-05 -12.1 1.00e+00 1.
00e+00h 1
51 19 1.6535821e-02 1.67e-03 2.20e-01 -5.7 4.02e-01 -12.6 9.74e-01 9.
58e-01f 1
52 iter objective inf_pr inf_du lg(mu) ||d|| lg(rg) alpha_du
alpha_pr ls
53 20 4.0004340e-03 1.82e-07 2.06e-04 -5.7 1.28e-02 -13.1 1.00e+00 1.
00e+00h 1
54 21 4.0039330e-03 3.36e-09 4.09e-10 -5.7 6.08e-06 -13.5 1.00e+00 1.
00e+00h 1
55 22 -1.9741358e-04 2.35e-07 3.70e-05 -8.6 4.88e-03 -14.0 1.00e+00 1.
00e+00f 1
56 23 -1.9708654e-04 2.56e-09 1.07e-11 -8.6 7.91e-07 -14.5 1.00e+00 1.
00e+00h 1
57
58 Number of Iterations.....: 23
59
60 (scaled) (unscaled)
61 Objective.....: -9.8543269604411511e-06 -1.
9708653920882301e-04
62 Dual infeasibility.....: 1.0682313160778460e-11 2.
1364626321556921e-10
63 Constraint violation.....: 5.8604510133619669e-13 2.
5603519304695510e-09

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64 Variable bound violation: 9.9749409644135628e-09 9.
   9749409644135628e-09
65 Complementarity.....: 2.5059038690136085e-09 5.
   0118077380272167e-08
66 Overall NLP error.....: 2.5059038690136085e-09 5.
   0118077380272167e-08
67
68
69 Number of objective function evaluations = 24
70 Number of objective gradient evaluations = 24
71 Number of equality constraint evaluations = 24
72 Number of inequality constraint evaluations = 24
73 Number of equality constraint Jacobian evaluations = 24
74 Number of inequality constraint Jacobian evaluations = 24
75 Number of Lagrangian Hessian evaluations = 23
76 Total seconds in IPOPT = 0.127
77
78 EXIT: Optimal Solution Found.
79      S : t_proc      (avg)  t_wall      (avg)  n_eval
80      nlp_f | 53.00us ( 2.21us) 48.42us ( 2.02us) 24
81      nlp_g | 2.12ms ( 88.29us) 2.12ms ( 88.24us) 24
82  nlp_grad_f | 138.00us ( 5.52us) 135.59us ( 5.42us) 25
83  nlp_hess_l | 4.54ms (197.39us) 4.86ms (211.16us) 23
84  nlp_jac_g | 4.59ms (183.68us) 6.57ms (262.69us) 25
85      total | 119.07ms (119.07ms) 137.31ms (137.31ms) 1
86 pydev debugger: warning: trying to add breakpoint to file that does
   not exist: /Users/simonhellmann/Documents/GIT/ad_meal_prep_control/
   ad_meal_prep_control/plot_generation/test_distribution_plot.ipynb (
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   ad_meal_prep_control/plot_generation/test_distribution_plot.ipynb (
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88

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